

Millsaps College Bulletin

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Images of Man In Economics In Origins of
Modern Science Of
A Composer

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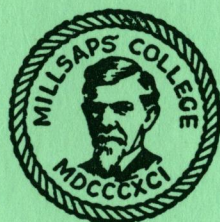
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FOREWORD

The conviction that the responsibility of a College to its alumni does not end with the conferring of degrees is held by a growing number of faculty members and administrators. We share that conviction.

It can be hoped that a college education is a foundation upon which the recipient will build throughout his lifetime. The complex society of today places great demands upon those who have been prepared for leadership. To be equal to the task, college men and women cannot allow themselves to slip behind an iron curtain of the mind. Education must continue. If, from time to time, the College can provide a stimulus which will inspire the alumnus to seek new knowledge it will have, in part, fulfilled an obligation it has to society.

The faculty addresses presented last year in chapel and to alumni and friends in an evening series have been published in the hope that they will be of value to you as you face the challenges and responsibilities of daily living.

Your comments are invited.

THE IMAGE OF MAN IN ECONOMICS

By Dr. E. S. Wallace

Chairman, Department of Economics

A former colleague on this faculty frequently began an oral comprehensive with the question, "Mr. Jones, what is the economic problem?" This was usually somewhat disconcerting to the candidate. In his courses he had studied many economic problems, but he was usually hard put to identify the one economic problem to which all others pertain. The problem to which my colleague referred is that which we frequently call "the dilemma of economics"—the fact that man, unlike other animals, is a creature of unlimited wants, but that the means of satisfying those wants are strictly limited. The first part of this proposition can hardly be doubted. We can conceive of some few men attaining such great wealth that their every need or whim for economic goods and services can be satisfied, but we cannot conceive of this for humanity as a whole, and for the great mass of men the very acquisition of wealth creates more needs than it fulfills. The second part of the proposition must be equally obvious. At any given time there is only a certain quantity of the resources—land, labor, and equipment—which can be combined to produce the goods and services needed to satisfy mankind's unlimited wants.

Thus our real economic problem, contrary to what we frequently hear and read, is one of scarcity, not surplus. Since all the wants of all mankind cannot be satisfied, there must be some means of deciding which wants are most important, what shall be produced, how production shall be carried on, and who shall get how much of the goods that are produced. In other words, we must have an economic system.

In his address in this series, Dr. Cain called attention to the recency of real progress and development in the natural sciences. The same is even more true of the science of economics, which, also like the natural sciences, had its origin in philosophy. Adam Smith, who published the first systematic treatise on economics in 1776 and is generally recognized as the founder of the science, was a professor of moral philosophy. Even in my own day economics (or political economy, as it used to be called) has frequently been an adjunct of other departments in colleges and universities. When I was a student at Duke, it was combined with political science. When I took my first teaching job at Mississippi State, it was part of the department of history, and when I went from there to Hendrix I found it combined with sociology. At Millsaps there was no separate department of economics until I came here in 1939.

The recency of systematic inquiry in economics is somewhat surprising at first thought, for mankind has always faced the economic problem which I have just described. Through more than six thousand years of recorded history man grappled with this problem, producing philosophers, poets, artists, statesmen, astronomers, historians — but no economists. And yet, on second thought, the explanation is quite simple. Over the course of these centuries man has found only three types of economic system (and is possibly in the process of evolving a fourth)—three ways of organizing society so that the economic problem gets solved. The first of these is tradition and custom, with trades and castes handed down from generation to generation. The second is autocratic central authority, with the work of the world done by slaves and serfs and peasants. The third is a system of individual freedom in a market economy.

So long as only the first two of these existed, so long as society was run by custom or command, it needed no economists to make it comprehensible. Early philosophers took it as a matter of course that the work should be done by an uneducated mass of people with no freedom of choice and little chance for economic improvement. Aristotle said, "From the hour of their birth some are marked out for subjection and some for command," and even in 1723 a writer could say, "To make society happy it is necessary that great numbers should be wretched as well as poor."

But with the growth of trade and commerce, the beginnings of the Industrial Revolution, the spread of democratic government, there was a need for someone to elucidate the new market economy, and Samuel Johnson declared, "There is nothing which requires more to be illustrated by philosophy than does trade." It was time for the science of economics to be born, and today, as a recent writer has said, "Man cannot live without an economic theology"—some rationalization of the apparently incoherent arrangements that provide him with his daily living.

II

Now that we have had nearly two centuries of modern economic thought, one may well ask what, if anything, has been accomplished. Have economists succeeded in giving man an accurate, rational, comprehensive, and comprehensible image of his economic activities? Have they aided at all in the solution of the economic problem? Have they contributed to the obvious economic progress that mankind has made? Have they given him any blueprint for further sound economic growth?

Some would answer these questions in the negative. The most frequently heard criticisms of economists are that they provide no definite, clear-cut answers to man's economic questions, make no unequivocal predictions, cannot agree among themselves on such answers as they have, and change these answers from time to time. You have perhaps heard it said that if all economists were laid end to end they would never reach a conclusion. (You may have also heard it said that if all economists were laid end to end it would be a good thing.) You have perhaps also heard the story of the alumnus who went back to his alma mater for a visit and found his old economics professor about to give a test. Glancing at the questions, the graduate said, "These look strangely familiar. Isn't this the same test I took when I was a student?"

And the professor replied: "Oh, yes, I give the same tests year after year."

"How do you get by with that?" the graduate wanted to know. "Don't the students get the old papers and learn the answers?"

"Oh, no," replied the professor, "in economics the questions don't change; it's the answers that change."

I would suggest five replies to these charges made against economists:

1. Answers change in economics because the economic environment changes. An answer that is appropriate in a rural, agricultural, slave economy is not appropriate in an urban, industrial, free economy. An explanation that fits an economy of small merchants and non-union labor does not fit one dominated by giant corporations and unions. And so on. This problem is much greater than in the natural sciences, where the natural environment changes much more slowly, if at all.

2. The lack of accuracy of predictions in economics is in part a product of the very subject matter with which economists must deal. The economist cannot experiment under controlled conditions, but must use as his laboratory the market place, where he is at the mercy of unpredictable and often irrational human behavior. This leads many who attempt prediction to hedge and equivocate.

3. Much of the apparent disagreement among economists stems from the difficulty in defining an economist. This label can be used by anyone. There is little basis

for the public to distinguish between an economist and a propagandist. Actually, the areas of agreement among reputable economists today are much broader than the areas of disagreement.

4. The differences in the answers and the changes in the answers are due in part to differences in value standards and moral judgments of the interpreters. Professor Baskin, in his address in this series, compared the mind of man to an aperture through which his observations pass before being projected as an image of reality in his speech and writings. Like theology and unlike mathematics, economics deals with matters men consider very close to their lives, and with matters that are highly controversial. On such matters personal predilections and variations in judgment of the relative importance of different goals will necessarily affect the images projected.

5. In any science it is inevitable that the answers should change. There would be no point to scientific observation and inquiry in any field if new knowledge, new insights, and new conclusions were not reached. This is true of those called exact sciences as well as of the social sciences. The physics and chemistry I studied in high school, even the biology and geology I studied in college, are at least as obsolete today as the economics I studied. It is said that a California science professor calls his seniors together just before graduation and tells them, "Half of all I have taught you is wrong. The trouble is I don't know which half."

III

I'd like to take just a few minutes now to examine in a highly condensed fashion the major changes in the answers in economics that have taken place in the past two centuries. Half a dozen or so names stand out in the history of this development.

The first of these is Adam Smith, who, in the words of Kenneth Galbraith, "gave the world the image of itself for which it has been searching. His vision became the prescription for the spectacles of generations." In his book **The Wealth of Nations** Smith examined a great mass of apparently unrelated data and found the basic connecting principle in the universal competitive striving of individuals for personal gain. This idea, which we accept as commonplace today, was revolutionary then. In the medieval world it would have been considered blasphemous to think that a whole society could be organized around the motive of human greed.

By this I do not mean that men had not sought wealth before. As Robert Heilbroner puts it, the quest for wealth has run like a golden thread through the tapestry of all recorded history. But the wealth-seeking of antiquity was not based on any idea that wealth was to be derived from production or from an increase in social output, of which the producer could keep part for himself. This was a non-acquisitive society in which slaves and peasants worked for mere existence, not for any hope of gain. Under such circumstances wealth-gathering was necessarily parasitic and had about it a taint of avarice, because acquisition enriched no one but the acquirer and usually was the result of gouging, force, political advantage, public exploitation, or fraud. This accounts for the Biblical attitude toward wealth and for the moral ambivalence toward wealth which we find even today. We seek wealth but sometimes worry about our motives in doing so. Today, however, the strongest attacks on wealth come from envious, disgruntled, left-wing radical groups. In the Middle Ages it was the church, the most conservative institution, that attacked wealth but at the same time pictured heaven as a millionaire's palace situated on a street paved with gold. In other words, it did not ask men to spurn wealth, just to defer it. Heilbroner suggests that those who deplore the materialistic bent of capitalism today might feel different had they known at first hand the common poverty of society a few hundred years ago.

Adam Smith did not escape criticism of this acceptance of human greed as the motivating force in the economy. John Ruskin called him "that half-witted Scotchman who taught the deliberate blasphemy 'Thou shalt hate the Lord thy God, damn his law, and covet thy neighbor's goods.'" Smith, however, recognized that the medieval system of serf and peasant labor was giving way to one in which the worker sold his services in the market for money wages and that therefore the quest for wealth was no longer a matter of greed but a necessity. He postulated a natural order in the universe which makes all the individual striving for self-interest add up to the social good. Every individual seeks to promote his own welfare, and by so doing "frequently promotes that of society more effectually than when he really intends to promote it. He is led as by an invisible hand to promote an end that was no part of his intention."

Thus Smith rationalized private selfishness into social virtue. Don't try to do good, he tells us, but let good emerge as a by-product of selfishness. Let consumers seek to satisfy their wants by purchasing the best and cheapest goods in the market. Producers, seeking their own gain, will have to produce what consumers want and will be restrained from undue gain by their own competition. Such competition will regulate personal income as well as prices. He thus envisaged a

self-regulating system of impersonal market control containing built-in evolutionary forces propelling it in an ever-ascending spiral of production through capital accumulation, mechanization, and specialization toward a higher level of living for all.

Within fifty years, however, Thomas Malthus and David Ricardo had transformed the optimistic, dynamic world of inevitable material progress, which Smith pictured, into a pessimistic, static state. Malthus was impressed by the dilemma of unlimited wants and limited resources, with which we started this discourse, and particularly by the tendency of population to multiply in geometrical proportion far beyond the means of subsistence, with the inevitable outcome famine, war, disease, or pestilence. Any increase in labor income, he thought, would be quickly matched by an increase in numbers, with the result that wages would be driven back to the subsistence level. Thus, in the words of Heilbronner, "Far from ascending to an ever higher level, society was caught in a hopeless trap in which the human reproductive urge would inevitably shove humanity to the sheer brink of the precipice of existence. Rather than headed for Utopia, the human lot was forever condemned to a losing struggle between ravenous and multiplying mouths and the eternally insufficient stock of Nature's cupboard, however diligently that cupboard might be searched."

Ricardo agreed, and added that competition among capitalist producers would result in the disappearance of profits. Land, he pointed out, was the only resource completely limited in quantity and was a free gift of nature. Thus the landlord was the only class that could gain from the growth of population. Malthus and Ricardo, then, pictured a world in which hungry mouths sought bread, the capitalist who drove the economic machine was cheated by competition out of any reward, the worker who pushed the machine just barely subsisted, and the small group of landowners, who contributed nothing, rode in the back seat and gloated over their unearned and constantly growing spoils. This was indeed a bleak outlook for the majority of the human race, and Carlyle, after reading these authors, gave to economics the name "the dismal science."

It was rescued from this category at mid-nineteenth century by John Stuart Mill, one of the greatest intellects who ever lived, a scholar with a most remarkable education. Those who are concerned about the education of the superior student today should read or re-read his autobiography, in which he tells of beginning the study of Greek at the age of three. Within the next five years he had read the dialogues of Plato, Herodotus, Xenophon, and Laertius. Then he took up Latin, and by the age of twelve had finished Vergil, Horace,

Livy, Sallust, Ovid, Terrence, Lucretius, Aristotle, and Aristophanes, as well as mastering geometry, algebra, and differential calculus, and had written an ancient history, a history of Holland, a Roman history, and some poetry. That year he took up logic and at thirteen made a complete survey of all there was to know in the field of political economy. Thirty years later he took six weeks off and wrote his famous two-volume work **Principles of Political Economy**, pointing out that the natural, impersonal laws which his predecessors had developed were laws of production, not of distribution. Once wealth had been produced, it could be divided up in any way society might see fit. Thus all classes could share in whatever growth in production might be achieved, and the outlook for mankind was not so bleak after all.

Twenty years later this comfort of the orthodox economists was shattered by Karl Marx, who used their own theories to postulate the injustice of capitalism and the inevitability of communism. He argued: If, as Smith, Malthus, and Ricardo said, the value of commodities was equal to the labor that went into them, and if, as these men also said, labor received only a subsistence wage, then it followed that the difference, or surplus value, as Marx called it, belonged to labor and that all other forms of income were a robbery from labor. The logic was unassailable if one accepted the premises. The working class would increase in numbers and in misery, Marx said, and business concerns would increase in size and decrease in numbers until with the periodic recurrence of depressions the situation would become intolerable and capitalism would inevitably evolve into communism. This has actually happened in much of the world. Much as we may dislike what Marx said, the disturbing fact is that many of his predictions have come true.

In these days when we hear so much about minority rights, it is a sobering thought that we in this auditorium today are, from a worldwide viewpoint, members of a minority race and a minority religion, living under a minority economic system. Communism has conquered the minds of many men largely because the Marxists understand their system better than we do ours. I do not mean simply that we must learn to parrot and to preach the virtues of free enterprise and the injustices of communism—but that we need really to understand the nature of modern capitalism, its weaknesses as well as its strengths, its faults as well as its accomplishments. It matters not what weapons we invent, what military might we have, what diseases we conquer, if we do not correct any tendency capitalism may have to evolve into communism. The reason capitalism has survived in the United States while it was collapsing in much of Europe, I think, is that we have had a capitalism that was flexible enough to be adapted to the changing times and a type of government which Marx

could not imagine—one that has not been just the tool of the controlling capitalist class, as he supposed, but one that has been willing to set up measures for consumer protection, to prosecute monopolies, to redistribute income, so that the tremendous material progress of capitalistic enterprise might be shared by all.

Following Marx, a host of lesser writers developed a subjective value theory to replace the labor theory of value and thus undermine Marxian logic. But they went to the opposite extreme and pictured men as pleasure machines competing for society's limited stock of pleasure and governing their every act by a sort of complex subconscious Univac on which they totaled up the debits of pain and credits of pleasure. These writers sometimes forgot that the rules of behavior underlying their theories were convenient assumptions, not reality, and thus set up a very logical economic model to explain a system that never existed. In the latter part of the nineteenth century, the great English eclectic, Alfred Marshall, combined the apparently contradictory explanations of countless others into a coherent and consistent whole which, in modified form, is the basis of our present theory of value and distribution. To it has been added in recent years the theory of imperfect competition, which recognizes that in the typical market today competition is among the few rather than the many and that commodities are not uniform, but differentiated by brand names and advertising, thus relegating Adam Smith's theory of atomistic competition to the status of a rare or limiting case at one extreme, balanced by the equally rare case of pure monopoly at the other.

In the present century in the United States the classical picture of society as "a well mannered tea party" was shattered by the penetrating insight of Thorstein Veblen, who denied that man's actions were governed by rational calculation and advanced instead the idea of "conspicuous consumption." By this he meant something of the sort of thing I observed during the early days of television, when possession of a set was a sign of great prestige. I watched somewhat enviously as a neighbor put up an aerial and sometimes thought I might go over to watch some program I particularly wanted to see. I didn't learn until after this neighbor moved away that he never actually had a set—the aerial was just to make people think he did. According to Veblen, man values his possessions by the money they cost and the status they give rather than by the actual satisfaction they yield. He also painted a savage and disturbing picture of the predatory nature of big business as it gouged wealth for the "robber barons" out of promotion of paper companies rather than production of real goods, and predicted that the system would either be taken over by the engineers and redirected toward the goal of productive efficiency or would evolve into what

today we would call fascism. His descriptions stung because of their vivid accuracy in depicting past practices, but like Marx he "badly underestimated the capacity of a democratic society to correct its own excesses. Veblen did not see that the climate of business was susceptible to change and that the institution of business might in time adapt itself to a vastly altered world" with higher moral standards and ethical principles.

No such mistake was made by the final figure in our list, John Maynard Keynes. Until his time economics had been dominated by the idea that the income from production is paid out in the form of wages, interest, rent, and profits, thus providing the purchasing power to buy the goods produced, and that therefore general overproduction and prolonged depression are impossible. Economists were still teaching this during the depression of the thirties when I began to teach, but as the depression lengthened it became increasingly difficult to get students to swallow the idea. Keynes pointed out the obvious, that some of this income is saved, and that unless this saving is balanced by new investment the goods will not be taken off the market and national income will fall until the equality of saving and investment has been achieved. Thus saving, which had been regarded by the orthodox as the basis of all material progress, though still a private virtue, might be a social bane. The economic machine might rest on dead center indefinitely, according to Keynes, with a high level of unemployment, and could be brought back into full-scale operation only by an increase in public or private investment. His writings, as modified and corrected in minor details by others, provide the theory and tools in vogue today for the prevention and correction of both unemployment and inflation, and thus for the provision of a higher level of material welfare for all.

IV

There are perhaps a few others worthy of inclusion in this list, but these are enough for my present purpose. In spite of all their differences, these great architects of the science of economics had at least three things in common:

1. They were concerned about the welfare of society as a whole and particularly of the common man, and were not spokesmen for the interests of the special groups or classes to which they belonged. Ricardo was a stockbroker who made a fortune by the age of thirty, but was known as a radical in Parliament, lamented the bleak outlook for the laboring classes, and fought against the interests of the landowning class to which he belonged. Malthus was a preacher and a teacher who never had much of this world's goods but defended the re-

cipients of rent and profits. Keynes was a millionaire and was made a lord, but preached the necessity for improving and sustaining the purchasing power of the masses as a basis for general prosperity.

2. They were dissenters from prevailing orthodoxy. One of my professors in graduate school had a favorite saying: "Contemporary economic thought is always largely wrong." This is because "there is a tendency for ideas to crystallize into dogma" and to be applied to new conditions to which they do not pertain. Economists are unpopular in many quarters because one of their responsibilities is to "resist the authority of the accepted." Such work is always suspect. As Galbraith puts it, "If a man seeks to design a better mousetrap, he is the soul of enterprise; if he seeks to design a better society, he is a crackpot"—or, more likely today, is labeled a communist.

3. They took the broad, the general view, which Plato calls the identifying mark of the philosopher. They saw the forest and were not blinded by the trees. The widely searching beacons of the moral philosopher, the stockbroker, the revolutionary, the millionaire, and the others I have mentioned illuminated the whole broad way down which mankind was marching.

By contrast today economics, like many other sciences, has become the special province of the professors, whose probings seem more like the pinpoint beams of a flashlight—sometimes with a dead bulb or a weak battery. Few economic books today are written from the heart, as these men's were—few take the searchlight view. Most economic writing today is concerned with some minute sub-topic of the field or is a re-hash of others' work in the form of a text. This is largely what may be called involuntary research, resulting from the almost universal pressure by large universities for their staff members to publish. I know of one university where a faculty member can get and retain an air-conditioned office only by turning out a book at least every three years, and in almost all of them promotions in rank and increases in salary are geared to writing rather than teaching, so that a professor's students become just a necessary evil. The result is that professors seeking status, students seeking graduate degrees, and now even undergraduates engaged in an honors program must whip up an artificial enthusiasm for research into some obscure problem that may or may not need investigating. And others in the field must then try to read what they write on the off-chance that occasionally they may really have discovered something new and important. You have heard of the man who learned more and more about less and less until

he knew everything about nothing. Perhaps you have also met the one referred to in this limerick:

I once knew a fellow named Guesser
Whose knowledge grew lesser and lesser
It became so damned small
He knew nothing at all
So they made him a college professor.

A few weeks ago my junior high school daughter saw me reading a book. (Whatever else may be said about this faculty lecture series, it has probably caused some of the participants to read a book. It might be very revealing to you to know how long it has been since some of the professors who assign your outside reading have read a book outside their own field. I hasten to assure you that this is not a matter of choice with them, but many of them are so busy reading what you write that they don't have time to read what anyone else writes. I once saw a sign in a library that has stuck with me. It said, "The man who doesn't read books is no better off than the man who can't.") Well, my daughter saw me reading this book and asked, "Daddy, do you read every book on economics that comes out?" This was a sobering question, and it set me thinking. For purposes of classifying the literature, **The American Economic Review** divides the field into seventeen sub-topic areas. Even in one of these areas I suppose it would be utterly impossible for a person, even if he did nothing else in a lifetime, to read everything worthwhile written before he started and the new things as they appear. This is quite discouraging. Even more discouraging is the fact that each sub-topic has developed an esoteric jargon of its own so that quite often the practitioners in one of these areas cannot communicate with those in another, yet few economists can afford to admit publicly that they cannot understand what other economists have written. This has reached the point that an economist writing a recent book addressed to the general public felt it necessary in the preface to apologize to his fellow economists for writing in clearly understandable English and to assure them that he could have been incomprehensible if he had wished.

Even in the textbook field this tendency toward overspecialization exists. I once taught an elementary textbook that had 26 different authors. The ultimate was reached a few years ago in one of the texts in which I had the dubious privilege of participating as co-author. In this one there were three authors per chapter—81 in all. (Incidentally, with 80 others to share with, I of course had no illusions about getting rich from the royalties, but I was hardly prepared for the first royalty check, which turned out to be in the amount of one cent. My first inclination was to keep it and have it framed, but then I reflected that they had meant for me to

have this and that the publisher's bank reconciliation statement would be cluttered for years with this outstanding check, so I took it down to the bank to cash it. The teller looked at it, examined the endorsement, then looked up and said, "How do you want it—heads or tails?"

But I must not overstate the case. What I have said, I think, is applicable in greater or lesser degrees to other fields of learning as well as to economics, yet much of this hack-writing and research into minute topics is valuable and necessary. As Professor James Bonar has said, dozens of minor writers work out the small details of theory. They are merely the hod-men or stonecutters. Then once in a generation or two some master builder comes along with the larger view, puts one pair of stones together many times over and writes a great book, as the men I have mentioned did.

V

Let us return to one of our questions. Has economics succeeded in providing man with a satisfactory image of this aspect of his life? I think it has. Much of the economics I studied in college was a description of a static state that never existed, but some strands of this unrealistic theory have now been woven into the new economics that does largely explain the dynamic society in which we live. In the two centuries of its modern development economic science has built a sound theory, but it has failed abysmally in teaching it to the general public. Even those basic principles on which economists are agreed have not been understood or accepted by others.

This is due in part to the defects in writing and teaching to which I have alluded—but only in part. There is good teaching as well as bad, and there are good books that take the general view and that can be read with profit by the uninitiated—I'll be glad to recommend a few to any who are interested. The basic difficulty is that even among those in the general population who have been to high school and college, most have never been exposed to any economic teaching, good or bad.

It seems tragic to me that the doctors, the ministers, the scientists, the teachers, the engineers we are turning out today are getting little, if any, education in the social sciences, because twenty years from now many of them will be posing as experts in one or more of these fields. For some reason, a successful man in any field is accepted by the public as an authority on economic, political, and social matters, whether he has ever studied the subjects or not. Doctors, scientists, preachers, lawyers, journalists, news commentators, and others tell us of the dangerous economic, political, and social

trends of the times. I would not presume to speak on chemistry or physics or medicine or theology, but these men do not hesitate to speak on economics.

I have been listening for thirty years to their dire predictions of calamity certain to result from New Deal, Fair Deal, and New Frontier programs. I have been told over and over of the tragedy sure to follow from the adoption or extension of Social Security, from the failure to balance the Federal budget, from the lowering or raising of tariff barriers, from the adoption of minimum wage and right-to-work laws, from the imposition of war-time rationing and price control, from high progressive income taxation, from the shifting of functions from state to Federal government. Most of the policies opposed by these prophets of doom have been adopted, yet I have the very definite conviction that the world in which I live today is better economically, politically, and socially than the world into which I graduated. And despite the dire forebodings and questionable projections, I have an equally firm conviction that the world into which your children will graduate will be better still.

But this progress has had to come and will have to come in spite of the economic illiteracy of the electorate. Even our most intelligent politicians must mouth the most outrageous fallacies to get elected and then sneak the sound economic programs in the back door, or justify sound action with specious argument.

VI

Now what does all this have to do with you as students here at Millsaps? The image of a college is found among its graduates, and Millsaps, according to the college catalog, seeks to project its image in the lives of community leaders in responsible citizenship. The Statement of Purpose, which you have heard and read many times, has this to say:

Millsaps College has as its primary aim the development of men and women for responsible leadership and well-rounded lives of useful service to their fellow men, their country, and their God

The College recognizes that training which will enable a person to support himself adequately is an essential part of a well-rounded education. On the other hand, it believes that one of the chief problems of modern society is that in too many cases training as expert technicians has not been accompanied by education for good citizenship.

I submit that no person can be considered educated for intelligent citizenship today who has made no study of government, economics, or sociology. Before the days of the market system and democratic government the vast majority of those by whom the world's work was done — the slaves and serfs and peasants — did not need to understand these subjects. Modern man does, even to read his morning paper intelligently. Almost every issue presented at the polls involves an economic question. Yet 90% of you in this student body entered college without even the briefest of introductions to economics in high school, and 80% of you still have not studied it. You have studied English and history every year of your school lives, and mathematics and science almost every year, but you have not studied economics—or, for that matter, political science or sociology. Two-thirds of you still have not had a college course in any of these subjects. Now I would not be so naive as to suggest that a course or two in one of the social sciences—or even in all of them—would make you an intelligent citizen, but they would help to make you aware of some of the problems, the pitfalls, the fallacies that persist and enable you to begin your own study and thinking that can aid you toward this goal.

One of my college professors remarked in class one day, "Science and technology have made a neighborhood of the world, but unless religion and education make a brotherhood of it, the whole thing will blow up." He was wiser than he knew, for he spoke before the age of jet planes, radar, space shots, guided missiles, and atom bombs. As Alvin Hansen of Harvard has put it, "Man has learned how to make a living but has not yet learned how to live." It is the great challenge of our time to provide a political, a social, and an economic environment that will enable men to live in peace and that will mitigate and finally eliminate the misunderstandings, the fallacies, the short-sighted selfishness that keep the minds of men apart and block our progress toward the goal of a better life for all. I challenge some of you today to seek the knowledge and the insight that will enable you to join in that effort.

THE IMAGE OF A COMPOSER

By Jonathan Sweat

Associate Professor of Music

Everyone who has been impressed by a great painting, excited by a powerful novel, or come under the spell of a moving musical performance may have wondered at some time or other what it was that impelled the painter or the writer or the composer to create—what there was about an artist that made him so different from his fellowmen, so different that he could write as Browning did, or compose as did Beethoven. Certainly he is no ordinary man, merely interested in the world as it appears; certainly he must be a man who searches for significance in the world about him. He gathers the subject matter for his poetry or music from his own experiences as a sensitive and observing member of human society. His greatest endowment, outside that of technical aptitude, is in his imaginative powers which enable him to extend and to develop his own experiences, to transfer his ideas of or his ideals for the world about him into words or into music.

Most of us are too closely concerned with life, its difficulties and joys, to see things in clear perspective. We lack the necessary skill, aptitude, and most of all, imagination to find expression for ourselves by creating in an art form. A great artist is the one who seems able to see life steadily and as a whole, and who is able to create from this vision a thing of beauty, a masterpiece that will express for the rest of mankind what it is too inarticulate to express for itself.

Great composers, then, have at least three traits in common: they are sensitive members of society, they have superior imaginative gifts, and, of course, they have technical aptitude. But from this point on we must face the fact that there can be no such being as a typical composer. Their personalities are as varied as any assorted group of lawyers, doctors, merchants, or, if you will, college professors. Nevertheless, if we cannot find a typical composer, we can certainly find many who are fascinating. It is not surprising to learn that men who are interested enough in the world about them to create great art for this world are men interesting enough to be considered and studied thoughtfully.

I should like to discuss briefly with you a particular composer, one who had a very keen and perceptive insight into society, and whose genius at expressing his thoughts inspired some of the greatest music of our civilization.

In the year 1792 Ludwig van Beethoven, age 22, arrived in Vienna, the music capital of the world, to take up residence

and to seek his fortune as a composer and pianist. He was welcomed enthusiastically and was almost immediately a success in his artistic endeavors. He was received cordially by the great and near-great. He was patronized financially by the aristocracy and nobility of Vienna. Idolized and lionized by the elect and by the commoner as well, he received the admiration of all musicians and the envy of many.

But in describing Beethoven let it not be thought that he was in any way a soft dilettante who lived in the mental luxury of an ivory tower. His childhood had seen to that: a childhood that had been one constant fight for survival of soul and body. His mental and musical gifts had made themselves manifest during his early boyhood. These musical gifts were exploited at the expense of his general education, which he sincerely desired. His drunken father made little effort to provide financially for his family. His mother died of neglect. His whole family life might best be described as a nightmare. These youthful influences were, of course, of great significance in the formation of Beethoven's character. Maltreated and abused, with no one in whom he might confide or trust, it is no small wonder that this sensitive boy emerged into manhood, not as a weakling, but as a seasoned pugilist. Deprived of the rudiments of a general education, suffering because of the social inferiority of his family and the degradation brought upon it by his father, Beethoven developed a character and personality in which fiery and passionate artistic expression served as one principal means of relief.

Beethoven, perhaps partly because of this tragic background, spent much of his adult life as a conscious and conscientious fighter for freedom. He was interested in freedom for men and freedom for music, and to him they were one and the same. The urge for liberty and equality that dominated the last half of the eighteenth and the first half of the nineteenth centuries lived in Beethoven as perhaps in no other artist of the period. The humble son of a menial musician discarded the wig and raised his head as the first modern musician who felt himself the equal of princes, profoundly convinced of the dignity of man and fanatically believing in freedom. His music is a constant echo of this personality.

Since Beethoven was so absorbed in the fight for freedom it is understandable that he watched with great interest and enthusiasm the rise of Napoleon Bonaparte to power. His admiration for Napoleon was so intense that he originally dedicated his Third Symphony, "The Eroica," to him. However, when he found that Napoleon had crowned himself emperor of France in May, 1804, Beethoven angrily changed the title of his work to "Heroic Symphony, composed in memory of a great man."

Beethoven was deeply interested in the common man and identified himself with him. His image of this common man was an idealized man, a noble creature who must constantly fight against the tremendous power of an ominous fate. In Beethoven's concept man and his fate were constantly pitted against each other in mortal combat. Since Beethoven himself was a fighter with an iron fist, he saw his noble creature man, after a long and bitter struggle, as the conqueror over his own fate. In this victory Beethoven showed his belief in the divine spark in man, that spark that could ultimately fell the powers of darkness. Beethoven's belief was in the inherent nobility of man, a nobility which he saw as a divine manifestation, a nobility destined finally to prevail over every tyranny.

Thus at the dawn of a new century was born a peculiar music, the incarnation of strength and beauty. The main impression of Beethoven's music is one of greatness. There is always something in him that stands above his personal fate. He was the poet of the ideal who had, in his own words, learned to take "fate by the throat."

In the first decade of the nineteenth century Beethoven's own moral strength and courage were put to the most grueling and terrible of tests. He found that his own fate was dealing him the most pitiless blow that could come to any musician. After some months of uncertainty, Beethoven realized definitely that he was slowly, but quite steadily, losing his hearing. It was only a matter of time until he would become totally deaf. Such a blow might well halt the creativity of lesser men. But the bitter, degrading misery which would have marred the spirit of another gave Beethoven's the bright resiliency of forged steel. Beethoven expressed his feelings very movingly in the "Heiligenstadt Testament." In this most personal document, written in the depths of despair over his increasing deafness, he confesses, "I almost reached the point of putting an end to my life—only art it was that held me back It seemed impossible to leave the world until I had brought forth all that I felt called upon to produce." And in his diary he wrote, "Courage, my mind shall triumph over all weaknesses of the body." And to a friend, "I lead an unhappy life, in conflict with Nature and Creator; more than once have I cursed Him that exposes His creatures to the meanest accident, so that even the most beautiful flower is destroyed and crushed. I will take fate by the throat; surely it cannot bend me down completely."

Outward adversity, then, seemed to build up inward power. His music began to show a new firmness of hand, a depth and purity of view. The composer was the conqueror. After months of anguish he confirmed his beliefs and proclaimed his strength in two of his greatest works, **The Fifth**

Symphony in C Minor and The Piano Sonata in F Minor, Op. 57, the so-called "Appassionata Sonata."

Both works were composed between the years 1804 and 1807 and they bear a striking similarity in style and temperament. Both contain the famous four-note "fate motif," used by the Allies as a symbol of freedom and victory during World War Two. It is said that during the last one hundred years Beethoven's **The Fifth Symphony** has received more concert hall performances than any other symphony. I believe that the same might well be true of "The Appassionata Sonata" in relation to other piano sonatas played in concert halls during the same period. These works are masterfully constructed and overwhelming in emotional impact.

Both show clearly that it was Beethoven who sired the romantic movement in music. Although fundamentally and always a classicist, Beethoven, by the infusion of his own ego into the traditional sonata form of his time, paved the way for most of the romantic music of the nineteenth century. Form, which had often seemed an unflinching tyrant to many a composer, became to Beethoven only a foundation from which to project his own thoughts. Certainly in these two works, **The Fifth Symphony** and "The Appassionata," Beethoven's personality shows very clearly—a personality which drove him to speak as he did, and in so doing to change the course of musical art. This music at no time aims merely to please the ear or to serve as tuneful entertainment. It is rather one man's personal expression of great and universal concepts. And since it is at once both personal and universal we can see in Beethoven's music a great transition. He brought to an end the classic era in music by carrying that movement to its fulfillment and laid a firm foundation for the romantic era.

The term "Appassionata Sonata" was not given to Op. 57 in the autograph; it was added by an early editor and has been rightly retained ever since. It is truly a nobly impassioned work, grandly conceived and grandly carried out. The first and last movements seem to know no restraints except that which directs the utmost power. The tremendous drive and vitality of the first movement subsides to soothing repose in a short set of variations in the second movement, only to be fanned again to hottest fury in the tremendous sweep of the finale. The artist has laid bare his emotional nature completely and startlingly. An image of Beethoven seems drawn in its terms—a figure of gigantic grandeur, shaken by every violent and moved by every tender emotion. No one can say that "The Sonata Appassionata" is not a faithful mirror of its composer.

Ludwig van Beethoven wrote during a period of great unsettlement and doubt—that period which followed the

French Revolution. He voiced the thoughts and emotions of that time clearly, accurately, magnificently. His music fulfills Taine's description of the period: "It is filled with discontent with the present, a vague desire for a higher beauty and a more ideal happiness, the painful aspiration for the infinite." Beethoven took the surging discontents and aspirations of his time and charged them with a vitality and emotional power that is as strong today as it was in the early part of the nineteenth century.

Beethoven speaks truth in a musical language that has universal appeal. It is not only the language of yesterday, but also of today, and for all time.

THE IMAGE OF MAN IN ORIGINS OF MODERN SCIENCE

By C. Eugene Cain

Associate Professor of Chemistry

Picture beside me here, if you will, the end of a set of steps. The bottom step can represent the basic science, mathematics. Mathematics in its purest form is concerned only with numbers, space, and time. The next higher step should be physics, the science of energy and matter. In it, energy and matter are related to each other in mathematical terms. The next step can represent the science of atomic interaction and rearrangement, chemistry. The concepts of physics and mathematics are used here to study the changes in properties and composition occurring during chemical reaction. The uppermost step can represent the science concerned with living matter, biology. Biological reactions involve chemical changes occurring in living organisms, and, therefore, can be studied, using the concepts of physics and mathematics.

Astronomy and geology occupy a portion of each of these steps in their study of particular areas of the universe.

Biology is placed at the top, not because it is the most important science, but because it is least exact. Mathematics at the bottom furnishes a firm basis for all the sciences and each step above it becomes more empirical. However, all the sciences move with time from the empirical toward the exact and, in so doing, obscure the boundaries between themselves.

Having just outlined the classical divisions of science, let me hasten on to point out that the steps and lines of separation just described are artifacts, a matter of convenience. It is becoming increasingly apparent that there are no biologists, or chemists, or physicists, and never were any. All are scientists. A biologist is a scientist working in biology. In his work in biology, he may tomorrow be using physics, and therefore become a physicist, or he may become a chemist, or a mathematician. Since one man can seldom be equally proficient in all these areas, he is usually designated by the name of the area in which he is most proficient, or in which he most often labors.

If the division of natural science is artificial, might not the division between science, philosophy, and history also be artificial? Do not misunderstand me: these divisions are not wrong, but they must be recognized for what they are.

I might say briefly in an aside that scientists have considered themselves ill qualified to speak of the arbitrariness of these divisions of understanding. But let me return to this point later.

Let us consider the origin of natural science. Natural science was originally considered a part of natural philosophy. The first great scientists were also philosophers. Newton, Lavoisier, Franklin, and Jefferson are four such men.

For convenience man has divided human understanding into three divisions. These are concerned with (1) when and where, (2) how, and (3) why. The study of when and where of natural events he termed history. The how of natural occurrences he called science, and the study of why he called philosophy.

The study of the how of natural occurrences trailed far behind the other divisions of understanding. Coming late in the history of man, modern science began about the time of the American Revolution.

To illustrate, at the time Christ walked on the shores of Gallilee man was aware that nine chemicals existed, and at the time Daniel Boone was beginning to hunt the "bar" in the backwoods of the New World only five more had been stumbled upon. In fact, almost one-half of the 100 or so chemical elements now known have been discovered since the birth of your parents.

Science began late, but once it had begun it moved forward in ever-increasing strides. The rapid advance of science enticed some of its followers to make some rash predictions about the ability of science to solve all of man's problems. This over-enthusiasm is not unnatural. This era of science might be called the sophomoric era. Every man on his way to maturity passes through such an age—an age characterized by a little knowledge, but not enough to realize limitations. Hence, the Greek origin of the two-part name *sophomore*: *sophos*, meaning wise, and *moros*, meaning fool. Today some people still think of science in terms of this bygone era and still feel obliged to refute these rash predictions. In fact, arguments against these old predictions still exist in some books in use today. It is interesting that these same people seem unaware that some other discipline may now be in the midst of its sophomoric period.

Unfortunately, there are people who fear science, either vocally or silently. Some of this fear may be based on the past era of science just discussed, but perhaps it is more often based on man's fear of what he does not understand. The

breakdown of understanding and communication between scientists and the public is of concern to both the public and the scientist. The scientist wonders how to overcome this barrier. The barrier is certainly in part the result of the vocabulary of the scientist. But this cannot be the only cause. The public doesn't understand the vocabulary of the doctor, or the lawyer, or sometimes the preacher. Perhaps it is because science has come upon them so suddenly. Then, too, science has been notably indifferent to public relations. For example, only Gadolinium, of the 92 naturally occurring elements, was named for a scientist—50 years after Gadolin had died.

Natural science, as the name states, is natural. Consider God's second command to man. The first was "Be fruitful and multiply" (that is, biology) and the second, "To subdue the earth and have dominion over it." As commanded, natural scientists are concerned with appreciation, understanding, and use of naturally occurring materials. Examples could be the conversion of coal and air to cloth, or the production of penicillin from bread mold.

This is undeniably the age of science. But what is science but the understanding and conquest of nature? The understanding and conquest of nature are two of the distinguishing characteristics of man. But only recently have man's years of practice begun to produce startling results. Man can only utilize what he knows. Science, in itself, is neither a blessing nor a terror: man makes that decision.

The scientist's lament is that man's practice in dealing with man hasn't produced results of the same magnitude. This attitude was expressed as early as two centuries ago in a letter exchanged between two of the world's first great scientists. Benjamin Franklin said, in a letter to Joseph Priestley, "It is impossible to imagine the height to which the power of man over matter may be carried in a thousand years. We may perhaps learn to deprive large masses of their gravity and give them absolute levity for the sake of easy transportation. Oh, that moral science were in as fair a way of improvement that men would cease to be wolves to one another."

The point was made earlier that the use of arbitrary divisions in science has made the scientist feel that he is not the logical one to remind the world of the artificial divisions in human understanding and experience.

But perhaps that same awareness of the artificial, and the rare ability to collaborate in spite of differences in training and ideology, make the scientist the logical choice. It is in science alone that mutual respect and companionship can

bridge the schisms of today's world and allow communication and collaboration. One of the recent examples of such cooperation was the International Geophysical Year.

If, indeed, the scientist is the one to point out that philosophy, science, and history are views of the same subject from different perspectives, then there should be a better understanding of how scientists themselves think and act. In their experiences, have the scientists found anything of other than material value that they can share with the non-scientist? The answer to this question is yes. I think these values can best be seen by looking at scientists as a group. We might look at (1) the way they live, (2) the way they approach a problem, and (3) the reason they are scientists. I do not presume to speak on any of these subjects myself, but instead offer you these quotations:

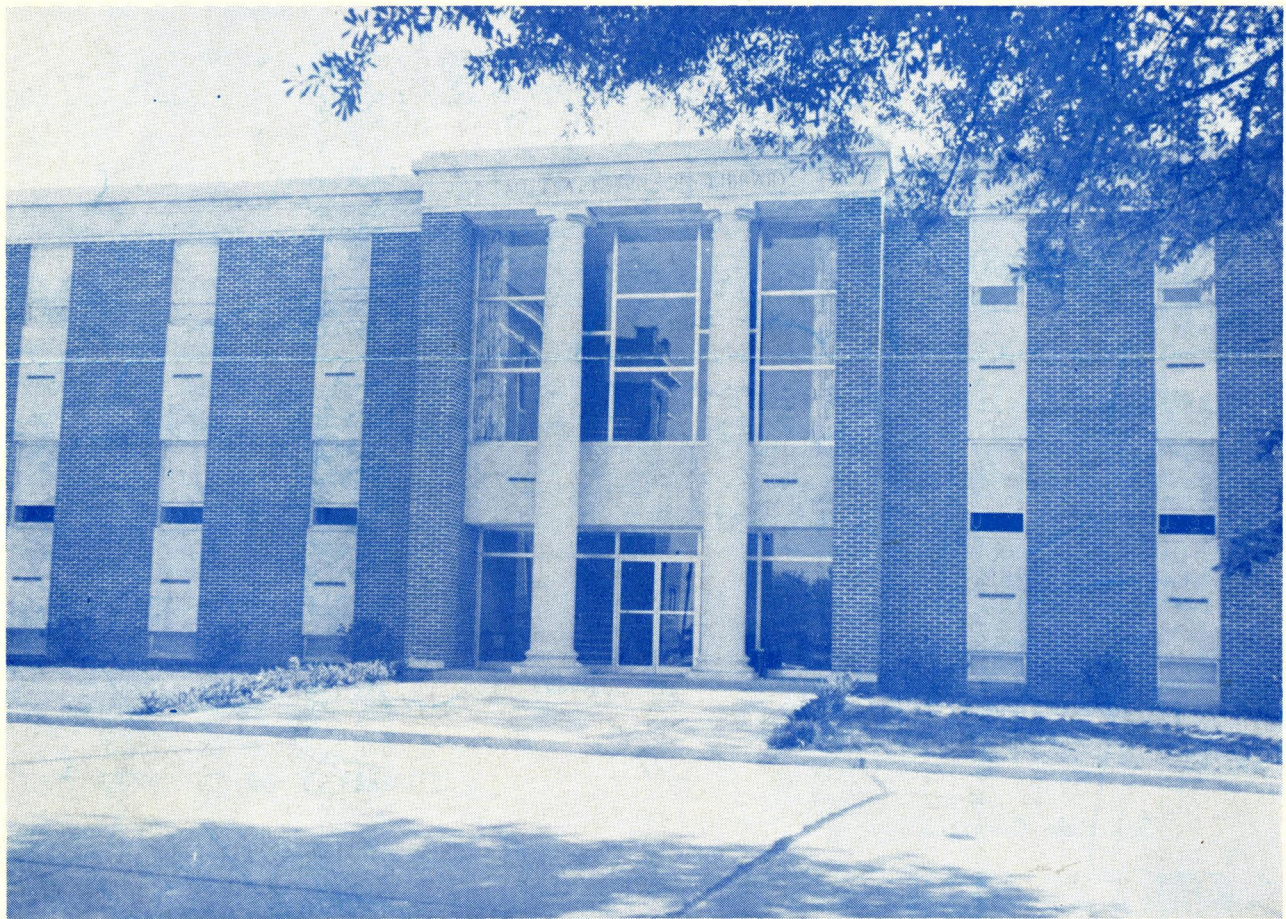
(1) On the way scientists live—Sir Charles P. Snow, professor of English and author of articles on science, says, "I know well enough that scientists are very much like other men. The moral qualities I admire in scientists are quite simple ones So I admire in scientists very simple virtues—like courage, truth-telling, kindness—in which, judged by the low standards which the rest of us manage to achieve, the scientists are not deficient. So scientists are not much different from other men. They are certainly no worse than other men." And Dr. Robert M. Page, director of the U. S. Naval Research Laboratory, speaks from the community of scientists when he says world peace will come "only when all mankind turns wholeheartedly to God in complete humility and voluntary unconditional surrender."

(2) How does a scientist go about his work? How does he approach a subject of interest? I think this can be illustrated by a little story which appeared in a recent magazine. The story concerns a science professor who simply forgot that barbers existed until he was reminded. His haircuts might be anywhere from three weeks to three months apart. His students organized a betting pool. Each time his hair became long enough to need a trim, a jar and a piece of paper were placed on a table outside the door. A student could drop in his quarter, sign his name, and guess the date of the next haircut. The professor was puzzled by the mysterious jar and list which appeared, disappeared, then reappeared a few weeks later. After the nature of his scientific training the professor began to keep notes and, after a few months, formulated a hypothesis. He walked up to the table, deposited a quarter, wrote his name and the date, went to the barber-shop, and returned to collect the pot.

I think the pattern followed by this scientist illustrates the method a scientist uses to approach a subject.

- (a) He noticed an interesting phenomenon.
- (b) He made the assumption that it had some meaning, that there was some purpose behind it.
- (c) He observed, made notes, studied the phenomenon.
- (d) He formed a hypothesis as to its meaning. Notice that he had enough faith in his hypothesis (25 cents worth) to test it.
- (e) He tested his hypothesis and in his testing
- (f) Substantiated his hypothesis.

(3) On the reason they are scientists—Jules Henri Poincare, mathematician and author, said, "The student does not study Nature because that study is useful, but because it gives him pleasure, and it gives him pleasure because Nature is beautiful: if it were not beautiful it would not be worth knowing and life would not be worth living. I am not speaking, be it understood, of the beauty of its outward appearance—not that I despise it, far from it, but it has nothing to do with science: I mean that more intimate beauty which depends on the harmony in the order of the component parts of Nature. It is this intellectual and self-sufficing beauty, perhaps more than the future welfare of humanity, that impels the scientific man to condemn himself to long and tedious studies. And the same search for the sense of harmony in the world leads us to select the facts which can most suitably enhance it, just as the artist chooses among the features of his model those that make the portrait and give it character and life. There need be no fear that this instinctive and unconscious motive should tempt the man of science away from the truth, for the real world is far more beautiful than any vision of his dreams. The greatest artists that ever lived—the Greeks—constructed a heaven. Yet, how paltry that heaven is compared to ours. And it is because simplicity and grandeur are beautiful that we select by preference the simplest and grandest facts, and find our highest pleasure sometimes in following the gigantic orbits of the stars, sometimes in the microscopic study of that minuteness which also is a grandeur, and sometimes in piercing the secrets of geological times which attract us because they are remote. And thus we see that the cult of the beautiful guides us to the same goal as the study of the useful."



The Millsaps-Wilson Library pictured above is air-conditioned. It provides an environment conducive to study. The new cafeteria, the bookstore, and many classrooms are also air-conditioned.

MILLSAPS COLLEGE BULLETIN

Summer Session 1962

First Term June 9 - July 14

Second Term July 16 - August 17

MILLSAPS COLLEGE

JACKSON, MISSISSIPPI

MILLSAPS COLLEGE SUMMER SESSION

CALENDAR

First Term

June 9 _____ Registration
June 11 _____ Classes Begin
July 4 _____ Holiday
July 14 _____ Final Examinations

Second Term

July 16 _____ Registration of new students and classes begin.
August 17 _____ Final Examinations

Admission—On Registration

High school graduates attending college for the first time should supply a transcript.

Students previously attending college but entering Millsaps for the first time and planning to spend the summer only should provide a statement of eligibility from the dean or registrar of the school last attended.

Students who wish to have credit for work earned in Millsaps College Summer School transferred to another college must file a written request for a transcript in our Registrar's Office before the transfer of credit will be made.

Schedule Changes

All courses listed will be taught, but the College reserves the right to withdraw a course if there is insufficient registration (less than 5) or to change instructors if necessary.

Students are expected to be present for each class session. Instructors may exclude students from a class and withhold credit if unexcused absences in that class exceed three.



Tuition

Five semester hours or less, each hour _____ \$15.00
Six or seven semester hours _____ \$90.00

LABORATORY FEES

Biology (except 52, 101) _____ \$10.00
Chemistry (except 82) _____ \$10.00
Economics 31, 32, 71 _____ \$ 3.00
Geology (except 52) _____ \$10.00
Modern Languages _____ \$ 5.00
Physical Education 21-22, 31-32 _____ \$ 2.00
Physics (except 31-32) _____ \$10.00

DORMITORY FEES

Room, each term _____ \$20.00
*Board, each term (3 meals per day, Board plan) \$45.00

SUMMARY OF EXPENSES

Day Students	1 5-Week Term	2 5-Week Terms
Total for Day Students, Tuition	\$ 90.00	\$180.00
Dormitory Students additional		
Room	\$ 20.00	\$ 40.00
Board	45.00	90.00
		<hr/>
Total for Dormitory Students	\$155.00	\$310.00

* Students wishing to pay cash for each meal instead of using the board plan may do so.

No scholarship or reduction in tuition or fees made for the summer session. Payment of tuition and fees should be made before the initial meeting of each class.

MAXIMUM LOAD

The maximum load that any student may take in one term is seven semester hours. Students attending both terms may earn a maximum of fourteen semester hours.

SCHEDULE OF CLASSES

Course	Term and Sem. Hrs.				Description	Room	Instructor
7:30-9:00	1st-hrs.	2nd-hrs.					
Biology	42	4 (ten weeks)			Comparative Anatomy	SH-23	Bell
Economics	21	3	22	3	Economic Principles and Problems	Union A	Walls-Wallace
Economics	41	3	71	3	Personal Finance — Statistics	M-304	Wallace-Walls
*English	11(1)	3	12(1)	3	Composition and Rhetoric	M-302	Goodman-Padgett
English	21(1)	3	22(1)	3	Survey of English Literature	M-301	Whitehead
*French	A1	3	A2	3	Elementary French	Lib.-301	Baskin
*French	11	3	12	3	Intermediate French	M-303	Craig
*Geology	11	3	12	3	Physical Geology — Historical Geology	SH-016	Johnson
*History	21	3	22	3	U. S. History before 1860 — after 1860	Lib. Forum	R. H. Moore
History	41	3	42	3	The Old South — The New South	M-113	Scarborough
*Latin	11	3	12	3	Intermediate Latin	Lib. 302	Coullet
*Mathematics	11	3	12	3	College Algebra — Trigonometry	M-305	Knox
Mathematics	21	3	22	3	Plane Analytic Geom. — Solid Analytic Geom.	SH-01	Cook
Philosophy	11	3	12	3	Introduction to Philosophy — Ethics	Lib. 304	Fleming
*Physical Education Men and Women					— To be arranged	Gym	Montgomery
*Physical Edu.	21	1	22	1	Golf	Gym	Montgomery
Physical Edu.	101	3	101	3	Hygiene	Union Rec.	Edge
Psychology	11	3	41	3	General Psychology — Social Psychology	SH-010	Bolick
*Religion	11(1)	3	12(1)	3	Old Testament — New Testament	CC-21	Anding
*Sociology	11	3			Introductory Sociology	Stu. Activ.	Whitam
*Spanish	A1	3	A2	3	Elementary Spanish	M-22	Bufkin
9:05-10:35							
*Biology	9	3	10	3	Fundamentals of Biology	SH-23	Caplenor
Biology	21A	4	22A	4	General Zoology (Invert. - Vert.)	SH-24	Bell
*Chemistry	21	4	22	4	General Inorganic	SH-011	Cain
Chemistry	31	4	32	4	Organic Chemistry	SH-17	Price
*Economics	11	3	12	3	Introduction to Business — Econ. Geog.	SH-016	Walls-Johnson
*Economics	31		32		Accounting Lab. (M., Tu., Th., F.)	M-304	Wallace
Economics			71		Statistics Lab. (W., S.)	M-304	Walls
Education	31	3	32	3	High School Methods — Principles of Secondary Edu.	Lib. Forum	R. E. Moore
Education	141	3	161	3	Science for the Elementary Grades — Arithmetic for the Elementary Grades	M-302	Meaders
*English	11(2)	3	12(2)	3	Composition and Rhetoric	M-301	Morehead
English	81	3	82	3	American Literature	M-113	Goodman
English	131	3	95	3	Chaucer — Modern Novel	M-304	Boyd - Padgett
*German	11	3	12	3	Intermediate German	M-22	Lowe
*History	11(1)	3	12(1)	3	European Civilization, 1300-1815 — Since 1815	Lib.-304	Scarborough
History	51	3	52	3	Problems in Modern History	Lib.-301	R. H. Moore
*Latin	A1	3	A2	3	Elementary Latin	Lib.-302	Coullet
*Mathematics	9	3	10	3	Foundations of Mathematics	M-303	Ritchie
Mathematics	31	3	32	3	Differential Calculus — Integral Calculus	M-305	Cook
*Physical Education Men and Women					— To be arranged	Gym	Montgomery
*Physical Edu.	21	1	22	1	Golf	Gym	Montgomery
*Physical Edu.	31	1	32	1	Tennis	Gym	Edge
*Physics	11	3	12	3	General Physics	SH-11	Galloway
*Physics	11A	4	12A	4	General Physics	SH-11	Galloway
*Physics	21	1	22	1	(Laboratory to be arranged)	SH-11	Galloway
Political Sci.	132	3	72	3	American Political Institutions — American Political Parties	Union A	Henderson
Religion	52	3	51	3	Christianity and Science — Church and Society	Stu. Activ.	Wroten
*Speech	11	3	12	3	Public Speaking — Oral Interpretation	Union Rec.	Camp
10:40-12:10							
Biology	41	4 (ten weeks)			Elementary Bacteriology	SH-23	Caplenor
Chemistry	71	4	61A	4	Quantitative Analysis — Pre-Med. Physical	SH-17	Price-Cain
*Economics	31	3	32	3	Introduction to Accounting	M-304	Wallace
Education	171	3	51	3	Literature for Children — Teaching of Reading in the Elementary Grades	M-302	Meaders
Education	181	3			Teaching Music in the Elem. Grades	Mus. Hall	Mrs. Byler
Mathematics	41	3	81	3	Calculus III — Diff. Equations	M-303	Knox
*Engineering	41	2	42	2	Engineering Drafting	SH-02	Ritchie
*English	11(3)	3	12(3)	3	Composition and Rhetoric	Union Rec.	Whitehead
English	21(2)	3	22(2)	3	Survey of English Literature	M-305	Morehead
English	121	3	161	3	Modern Poetry — Advanced Grammar	Lib. 302	Boyd-Goodman
*German	A1	3	A2	3	Elementary German	M-22	Lowe
*History	11(2)	3	12(2)	3	European Civilization, 1300-1815 — Since 1815	M-301	Laney
*Music (See below)							
*Physical Educ.	21	1	22	1	Tennis	Gym	Edge
*Physical Educ.	31	1	32	1	Golf	Gym	Montgomery
*Physical Education Men and Women					— To be arranged	Gym	Montgomery
Philosophy	21	3	22	3	Esthetics — Logic	Lib.-304	Fleming
Physics	81	1	81	1	Photography	SH-17	Galloway
Psychology	22	3	21	3	Human Growth and Development (same as Educ. 22) — Educational Psychology	Lib. Forum	R. E. Moore
Psychology	72	3	62	3	Industrial Psych. — Dynamics of Human Behavior	SH-010	Bolick
*Political Sci.	21	3	22	3	American Govt. — State and Local Govt.	Union A	Henderson
*Religion	11(2)	3	12(2)	3	Old Testament — New Testament	Stu. Activ.	Wroten
Sociology	81	3			Deviancy, Delinquency, and Criminality	Lib. 302	Whitam
*Spanish	11	3	12	3	Intermediate Spanish	M-113	Bufkin
Speech	23	3			Persuasion	Lib. 301	Camp

AFTERNOON LABORATORIES WILL BE ARRANGED AT THE FIRST MEETING OF EACH CLASS THAT HAS LABORATORY SESSIONS.

**Organ, Piano, and Voice may be arranged through Mr. Lowell Byler (Voice), Mr. Donald D. Kilmer (Organ and Piano—2nd semester), Mr. Charles K. Sims (Voice), and Mr. Fred Purser (Piano—first semester).

*Courses open to freshmen.

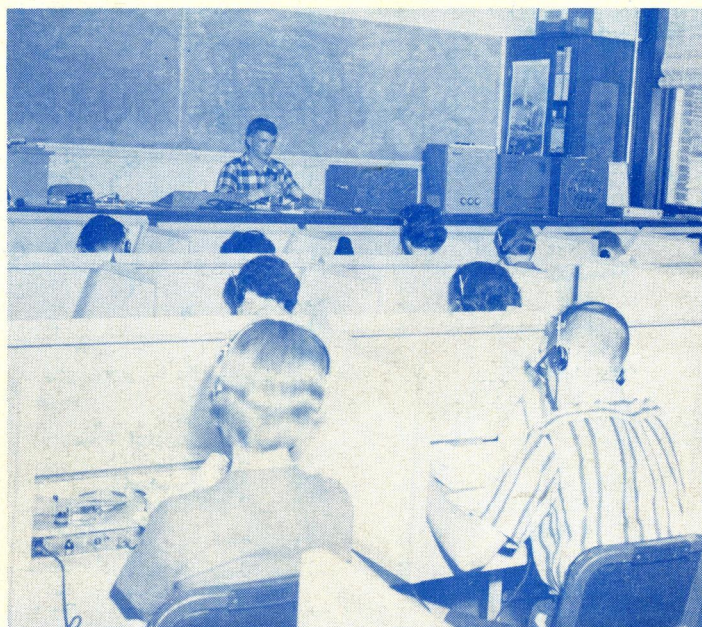
Intermediate-level courses in foreign languages open to freshmen who have had two years of the same language in high school.

Gulf Coast Research Laboratory courses recognized for full credit.

Economics 91 — Principles of Insurance

10:40 — 2nd sem. — 3 hrs. — Lib. 301 — Walls

10:40 — 2nd sem. — 3 hrs. — Lib. 301 — Walls



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